

ABSTRACT

The invention provides BASB232 polypeptides and polynucleotides encoding BASB232 polypeptides and methods for producing such polypeptides by recombinant techniques. Also provided are diagnostic, prophylactic and therapeutic uses. The invention further provides immunogenic compositions comprising a plurality of antigens selected from at least two different categories of antigen, having different functions within Bordetella. Examples of such categories of antigen are autotransporter proteins, iron acquisition proteins, lipoproteins, adhesins and toxins/invasins.